

WHAT IS CLAIMED IS:

1. A non-aqueous electrode battery comprising
a cathode containing an cathode active material;
an anode including, as an anode active material, one or more thin film layer(s) containing a first metal that may be alloyed with lithium, said thin film layer(s) being formed by a thin film forming technique, said anode containing one or more of a second metal not alloyed with lithium, a third metal that may be alloyed with said second metal, a fourth metal not alloyed with said second metal, and a carbonaceous material capable of doping/undoping lithium ions; and
a non-aqueous electrolyte containing an electrolyte salt.
2. The non-aqueous electrode battery according to claim 1, wherein said first metal is an alloy composed of one or more of Mg, B, Al, Ga, In, Si, Ge, Sn, Pb, Sb, Bi, Cd, Ag, Zn, Hf, Zr and Y.
3. The non-aqueous electrode battery according to claim 1, wherein one or more of said second metal, third metal, fourth metal and said carbonaceous material is contained in said thin film layer of said anode.
4. The non-aqueous electrode battery according to claim 1, wherein one or more of a second thin film layer(s) containing one or more of said second metal, third metal, fourth metal and said carbonaceous material is provided by film forming by a thin film forming technique in said anode in addition to said thin film layer(s).

5. The non-aqueous electrode battery according to claim 1, wherein one or more of a mixture layer(s) containing one or more of said second metal, third metal, fourth metal and said carbonaceous material and a binder is provided in said anode in addition to said thin film layer(s).
6. The non-aqueous electrode battery according to claim 1, wherein the anode substrate of said anode is metal and/or a polymer.
7. The non-aqueous electrode battery according to claim 5, wherein said polymer is a high molecular weight polymer comprising one or more of an olefinic resin, a sulfur-containing resin, a nitrogen-containing resin and a fluorine-containing resin.
8. The non-aqueous electrode battery according to claim 5, wherein said polymer has a true specific gravity not less than 0.9 g/cc and not larger than 1.8 g/cc.
9. The non-aqueous electrode battery according to claim 1, wherein said cathode active material of said cathode is a lithium metal oxide represented by the general formula $\text{Li}_x\text{M}_y\text{O}_z$, where M is one or more of Co, Ni, Mn, Fe, Al, V or Ti, with $x \geq 1$, $y \geq 1$ and $z \geq 2$.
10. The non-aqueous electrode battery according to claim 1, wherein said cathode in a band shape and said anode in a band shape are coiled along the longitudinal direction with a band-shaped separator in-between.